SOCIAL SCIENCES

Volume Seventeen

URBAN LAND

Number Three

March, 1958

NEWS AND TRENDS . . .

IN CITY DEVELOPMENT

PUBLISHED BY URBAN LAND INSTITUTE

DETROIT PUBLIC LIBRARY APR

DESIGN AND DEVELOPMENT OF HILLSIDE, LARGE-LOT AND RESORT SUBDIVISIONS

by

GEORGE C. BESTOR
Civil Engineer and Land Surveyor
Carmel, California

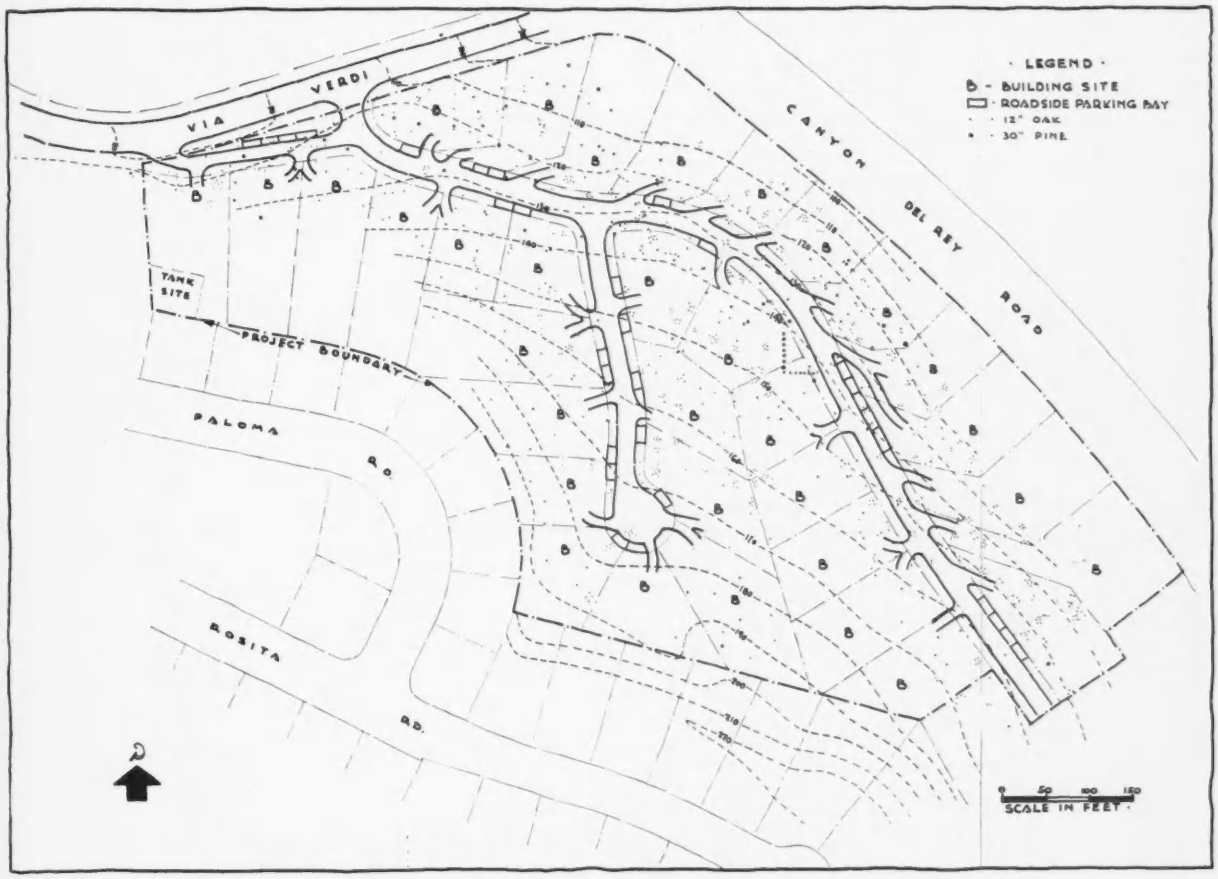

Diagram of detailed Plan developed by the Author which incorporates various land planning features recommended in the text.

If reproduced in whole or in part, credit must be given URBAN LAND *and to the Author.*

Plan-itorial . . .

Suburban Downtown in Transition

Having received a number of books for review recently whose bulk was at least as impressive as their contents, it was with some excitement that we opened a small volume measuring a mere one-half inch in thickness. Our interest was aroused by the title SUBURBAN DOWNTOWN IN TRANSITION. Also, we were not discouraged when we found this to be only one of a proposed series of studies on business and social changes of the Northern New Jersey portion of the New York Metropolitan area. Our enthusiasm increased when we discovered that not only was the text readily understandable but that the study provided material which could be directly helpful in evaluating suburban and downtown retail trends in many sections of the country.

Specifics

Specifically, the report deals with five existing suburban business districts in Bergen County. New Jersey, and analyzes four problems facing retail shopping areas in a rapidly changing period of urban expansion.

First, the underlying social and economic forces which are creating the retailing revolution are reviewed as a prerequisite to a better understanding of causes and hence the kinds of solutions needed. Second, the opinions of the merchants are analyzed regarding the effect on sales and store operations of two regional centers about to open their doors. This provides a basis for assessing the need for action, both in terms of physical plant and of merchant attitude. Third, the relative advantages and disadvantages of suburban "downtown" districts and shopping centers are explored, leading to the fourth area—the development of a program for improving the competitive position of each of the five downtown districts.

Conclusions

In the concluding chapter of this little volume the research team of Samuel and Lois Pratt make some broad generalizations which are a key to the specifics of the study and which indicate its value to merchants, landlords and shopping center developers alike.

"One way to describe the present situation is this: Bergen County is on the verge of some dynamic retailing changes, but the precise character and direction of the changes are still to be determined. This is the beginning, not the ending. The downtown merchant is presented with a strong challenge to rebuild, and the shopping center with a need to obtain a market.

"It is clear that the major retailing shifts now under way in this area are a consequence of continuing fundamental social changes that transcend the New York metropolitan area. The regional shopping centers are a symbol of continuing general urban growth. Recognizing this is important in arriving at the right solution for suburban downtown business districts and for the shopping centers. The job is to integrate both as vital parts in a dynamic metropolitan community.

"The forces that have been reviewed do not add up to a predetermined retailing pattern. The shopping centers may not live up to expectations, or they may offer even more than consumers anticipated. The aggressive improvement programs that the retailer survey uncovered will have results that are not predictable at this time. For instance, the downtown areas that have been treated as one are actually very different in many ways. They have been competitive with one another for many years. What will be the consequences of aggressive redevelopment in one downtown area but not in its competitor downtown?

"In focusing the discussion on the downtown districts, much of the impact from the regional centers has necessarily been omitted. For instance, shopping centers will have an impact far beyond retailing. In themselves, they will be significant economic additions to the broader community. They will add to the tax base of a few towns, but their economic impact will be felt in other towns through increased local employment opportunities within fast and cheap commutation distance.

"The regional centers have already proved a stimulus to intergovernmental cooperation. . . . Strong merchant groups are bound to have unanticipated conse-

(*Continued on Page 7*)

URBAN LAND

Vol. 17, No. 3 **March, 1958**

OFFICIAL PUBLICATION OF
URBAN LAND INSTITUTE

1200 18th St., N. W., Washington 6, D. C.
Single copies $1.00; 50¢ to U.L.I. Members.

MAX S. WEHRLY, Editor
J. ROSS MCKEEVER, Asst. Editor

OFFICERS OF
URBAN LAND INSTITUTE

DAVID D. BOHANNON, San Mateo, Calif., President
BOYD T. BARNARD, Philadelpha, Pa., First Vice President
CLARENCE M. TURLEY, St. Louis, Mo., Second Vice President
WAVERLY TAYLOR, Washington, D. C., Secretary
MAURICE G. READ, Berkeley, Calif. Treasurer
MAX S. WEHRLY, Executive Director

CHAIRMEN OF
URBAN LAND INSTITUTE COUNCILS

HUGH POTTER, Houston, Texas
Community Builders' Council
BOYD T. BARNARD, Philadelphia, Pa.
Central Business District Council
EARL D. HOLLINSHEAD, Pittsburgh, Pa.
Industrial Council

MODEL PROCEDURES FOR ZONING ADMINISTRATION

Results of the J. C. Nichols Grant-in-Aid research conducted at Cornell last year are now available in published form. The study is entitled "A Model Procedure for the Administration of Zoning Regulations" and is the work of Robert M. Leary. Complimentary distribution of the study is limited to college and university libraries *upon request.* Copies to others are available at $5.00 each and can be ordered directly from the Urban Land office. The American Municipal Association is making this study available to its key members in the interest of better zoning administration.

DESIGN AND DEVELOPMENT OF HILLSIDE, LARGE-LOT AND RESORT SUBDIVISIONS

by
GEORGE C. BESTOR
Civil Engineer and Land Surveyor
Carmel, California

Editor's Note

The article in this month's URBAN LAND by George C. Bestor lays down a challenge to both the land developer and the public official and, perhaps without intending to do so, points up a human failing that exists in all of us, the tendency to follow the line of least resistance. In the case of the developer it is often resistance to departing from tried and accepted methods. In the case of the public official it is too often the tendency to retire behind a set of arbitrary regulations with the statement that "This is what it says on page X, Section 1, paragraph 5". In neither case is the person in question contributing to the creation of better community planning or satisfying a demand for something a little different from the run of the mill tract development.

Mr. Bestor knows his subject. He is a registered civil engineer and licensed land surveyor (engineers take note) practicing in California and with a wealth of practical experience behind him. This article is based on an extensive study he has been undertaking as Chairman of the Committee on City Engineering and Land Planning of the California Council of Civil Engineers and Land Surveyors. The case study referred to in the text is pictured in diagram form on page 1. When full cost analyses have been made on this project we hope to carry the results in a future issue.

Although the study is oriented to the California scene there is much food for thought in it for city engineers, city planners and developers throughout the country. After all California doesn't have a monopoly on hillsides.

I have been deeply interested in the problems of developing hillside and large-lot subdivisions for many years. The Monterey Peninsula, where I practice, affords virtually no undeveloped land in or near incorporated communities which is not so steep as to offer development problems. When a developer goes a distance from a town he often finds the land zoned so that he must make his lots one, two or five acres in area. Even so, the subdivision ordinances and improvement standards still control, although prepared for level land and for lots of six or eight thousand square feet. Logical development, in fact any development, has been severely hampered and the resulting steep rise in lot costs has ended low-priced home construction in this entire area.

I do not have experience with other areas, but from the number of complaints one hears, there must be many communities facing the same problem. The California State Planning Office says that some 16 cities and counties have adopted subdivision ordinances specifically drawn to deal with hillside development. An additional 21 cities and counties have such ordinances in preparation, or "awaiting adoption." One large city lists its hillside ordinance as "awaiting adoption" since 1952, another as having been "in preparation" since 1953. Whether this limited number of special hillside ordinances represents a lack of need or a lack of satisfactory answers, is hard to say.

Types of Development

1. *The True Hillside Subdivision.* This classification is limited to those steep land subdivisions where the views, extra space and perhaps trees are a definite asset. It does not include subdivisions where small lots are made possible by retaining walls, where trees are virtually eliminated, or where flat building sites (the builders' joy) are obtained by heavy terracing.

2. *Subdivisions on a Hillside.* This type of development is on a hillside solely because there is no flat land available. In or near metropolitan areas it is undoubtedly a necessity, for urban sprawl cannot be extended to an indefinite distance from commercial centers, and nearby land must eventually be fully developed no matter how steep Also, this close-in land is frequently so high-priced, regardless of slopes, that only by intensive exploitation of every square foot can the subdivider make a profit.

3. *Large-Lot Subdivisions.* These are normally found only near the smaller communities, at the outer fringes of a metropolitan area, or in high-cost neighborhoods. Invariably the buyer want semi-rural living, informality, and maximum preservation of trees and other natural features. Usually he will pay as much or more for a lot without concrete curbs as for one with them. Formal curbs, concrete walks, and other attributes of urban areas are a detriment rather than an asset to the average large-lot buyer. Unfortunately some jurisdictions require them.

It seems to be well agreed among planners that a reduction of population concentration is desirable in many areas, and usually this is one of the reasons behind zoning regulations which require half-acre, acre or larger lots. However, providing utilities, wide streets and concrete curbs in an area limited to acre lots is possible only when some local condition makes these lots very valuable. I know one experienced developer who went broke because, just after he had put his money down on a large parcel, acre zoning was extended to include the area. I feel that in most cases, the most informal development consistent with good access and proper drainage should be allowed in low density subdivisions, not only to please the buyers, but also to encourage this type of development.

4. *Resort Developments.* This classification includes mountain or beach developments, usually with part-time occupancy of dwellings. Few of these have been promoted of late because of cost, as an essential characteristic is that lot prices must be low to support seasonal residences. Many resort developments which have grown up have occurred where it was possible to divide and redivide existing parcels of land without being subjected to subdivision requirements, with a resultant mess of unsatisfactory rights-of-way and overflowing septic tanks.

Improved transportation has brought us closer to the metropolitan areas, making it possible for many families

to get use and pleasure from a week-end or summertime cabin. Quite a few of these cottages are scattered about, but organized development along this line is impossible at present. Although this is a desirable type of improvement in certain outlying areas, something should be done to facilitate development. I believe suitable standards can be set up which will not turn a redwood canyon into a copy of a city suburb and which will provide for adequate access and drainage without running up development costs beyond reason.

Basic Site Requirements

The ultimate buyer of a lot wants a site for his home that reasonably satisfies his needs and desires. He wants a plot of ground adequate in size and shape for his proposed home, plus sufficient lot area for his outdoor activities. There must be sufficient space between his home and other facilities (streets, adjoining homes, schools and other commercial activities) in order to provide adequate light, air and some privacy and to minimize noise, interference and other sundry nuisances.

Another prerequisite is that there must be an adequate and safe access to his property. The owner (and especially his children) should be protected against traffic hazards in reaching and conducting normal activities on or near his property. The safety factor is often overlooked in stressing adequacy of access. He should also have protection against such natural dangers as flooding, ground settlement, landslides, etc.

He will want a site where he and his family can realize the maximum of their particular needs (consistent with their finances), such as accessibility to work, shops, schools and play areas. To some it is also important to satisfy such special desires as views, trees and "elbow room." In hillside and large-lot subdivisions, these last factors are very significant. Unless a family settles on a hill or on an acre lot because they cannot find another home to fill their needs, they are usually locating there because they want "something special". Why force these people into a slightly adjusted version of a run of mine subdivision. Today a buyer often has to find a left-over lot in an old subdivision if he wants a place for informal living and with some individuality.

Why Changes in Subdivision Ordinances Are Needed

There are several basic reasons why hillside areas, large-lot subdivisions and resort areas need special ordinances and improvement standards. Among these are:

1. *Financial Reasons.* Water, electric power, storm drainage and sanitary sewer costs are exceptionally high due to terrain problems and oversize lots. The cost of developing roads is high, due to extended street frontage per lot for large-lot, and excessive grading in hillside areas. A limited number of building sites per acre coupled with high on-lot development costs push the development costs far above the costs for a standard subdivision.

2. *Esthetic Reasons.* Esthetic reasons for not using standard subdivision ordinances for hillside developments should be pointed out. Wide streets destroy trees and natural land formations and heavy lot grading often eliminates what is left of the natural beauties of the original hillside. Generally a buyer selects a hillside area in which to live because he wants to get away from the cramped conditions and formal living of "normal" subdivisions; he should get all possible informality and privacy consistent with good engineering and with practical financial considerations.

3. *Engineering Reasons.* Poorly designed roads are especially dangerous in steep terrain. In addition, road and lot drainage problems are more severe, with more destructive flash-runoff and erosion if drainage is inadequate. The adequate compaction of fills under roads and houses is a serious matter, and unstable natural slopes must either be avoided or the condition corrected.

Present Solutions

A number of thoughtful studies have been made of hillside developments, fewer of large-lot or resort subdivision. Most of the hillside subdivision ordinances agree on the following general principles, though diverging widely as to details.

There seems to be agreement that not much can be done to avoid the high cost of utilities when subdividing into large lots, and most hillsides are in, or approach this classification. Where lot size and soil characteristics permit, septic tanks are sometimes allowed. There are fewer instances of this practice than previously and many existing septic-tank subdivisions are being sewered today through the cumbersome means of improvement districts.

Street and lot drainage are serious problems on hillsides, and it is generally conceded that adequate provisions must be made to prevent erosion damage. Differences of opinion arise however, as to how far a subdivider should be forced to take care of every possible future drainage condition.

The principle that deep fills must be adequately compacted also finds wide agreement. But, arguments arise as to what extent soil engineers and erosion control experts must be employed by the subdivider.

Agreements exist that, as the steepness of ground increases, so must the size of the lots. Some existing ordinances specify that above such-and-such percentage of cross slope, the minimum size lot must be 10,000 square feet, in the next bracket of steepness the minimum must be 20,000 square feet, and so on. Other ordinances simply classify all land above 10% or 15% cross slope as being subject to the special hillside regulations, then go on to specify improvement requirements, with lower improvement standards permissible if lot size is increased.

It is not only a financial necessity to have narrower streets on hillsides, but they are also esthetically desirable because of the reduced destruction of trees and other natural beauties. Most studies, after agreeing upon narrower streets, concentrate on the necessity of parking on one or both sides of the street, and on the need for moving lanes of traffic with sufficient space between parked cars to permit fire trucks to pass easily. Sometimes a hillside study gives consideration to sidewalks and the desirability of having cut-and-fill slopes totally within the public right-of-way. For minor streets, used only for access to homes, this usually results in a pavement width of 24 to 30 feet, and a right-of-way of 50 feet. This is unquestionably easier to work with in steep country than normal curb-to-curb widths of 34 to 40 feet, and it reduces "scarring" the hillside, the destruction of trees, and the problem of access to building sites.

Recommended Solutions

Some of the existing hillside subdivision ordinances are big steps in the right direction. However, I do believe that they have not been bold enough in certain respects. Only some 16 cities and counties in California have seen fit to adopt regulations specifically covering hillsides. I have no record of how many provide specifically for resort-type developments or for large lots on flat land.

Planning commissions and other governing bodies should be made to recognize that the developer of hillside, large-lot or resort subdivisions is doing a service to the community, that he is operating under special handicaps, and

therefore needs all possible assistance. In some places the developer of such areas is regarded as a special type of villain, intent upon destroying the beauties of the countryside. Basically, however it is not the developer who is responsible for the existence of a subdivision, but the pressure of population. Without a demand for lots, the developer would soon stop producing them. If there were no men willing to take a chance (sometimes a very long gamble in cases of developments such as we are discussing) there would be no suitable place for the incoming population to live. The overcrowding at the end of the War is an illustration of what happens when people keep coming at a time when building and subdivision developments are dormant.

Governing bodies (who are always tax-conscious) should recognize that the developer, who turns to these special areas, is improving the tax base far more than the subdivider of flat land. The latter terrain usually brings in an appreciable tax as agricultural land, and if not subdivided into lots may have value as commercial or industrial land, or for use as school sites. Steep land, on the other hand, can seldom be so intensely developed as to bring in maximum tax return unless used for single family residences. Consequently the hillside subdivider should get a special welcome at the city hall or court house.

In addition to his problems with utility costs and the limited number of sites which he can get from his land, the developer is frequently faced with the fact that hillside and other special lots move slowly. They are usually high-priced, and speculative builders (who make up most of today's market) do not like them. I know of one hillside development of beautiful acre lots with trees and ocean views which is only two-thirds sold and one-fifth built after 12 years. Just below, in the flats, a 100-lot subdivision which started two years ago, today has every lot occupied, and the developer has almost completely liquidated his investment.

Subdivision Design

The developer of special tracts especially needs leeways in subdivision design. Lot sizes, lot shapes, frontages, rights-of-way, street widths, easements, building setbacks and other details of subdivision design often make a great deal of difference on hillsides. Therefore an inflexible ordinance which is so often imposed with 6,000 square foot lots in mind can be a costly problem.

Zoning hillside areas for certain minimum lot sizes makes sense, except in communities where the "Subdivision on a Hillside" is a necessity. It is impossible to develop a hillside for small lots without the use of retaining walls and heavy grading. If all hillsides were uniform, area zoning would be a perfect solution, but such is not the case. Often a hillside is so steep and has so many ravines that one building site per two or three acres is necessary, yet nearby there may be delightful benches or ridge-tops that are flat.

A developer should be held to averages in lot size, with a more lenient minimum when justified, rather than to so-called averages which become minimum. If he has some two-acre lots, the developer may need a few balancing half-acre lots to come out economically. In addition to helping him out financially, such lots fill a public need. There are many people who desire rural living and yet do not have time or strength to maintain a large lot. Overly large lots are not an unmitigated asset. Unless wooded or otherwise attractive in the wild state, they can become an eyesore if not kept up. If two or more good building sites are lumped together into a single lot, there may be pressure someday for a lot-split. When economic, or when political or personal conditions happen to be right, some planning commission is likely to grant such a split. Planned lots are much better than subsequent forced splits. Many of our worst-looking residential areas are those where the initial lots were uneconomically large and have been hacked up through the years.

Variations often prohibited in general subdivision ordinances, such as "panhandle" lots or lots reached by easements, are sometimes necessary in the special subdivisions under consideration. It is often impractical to extend a public road to each one, two or three building sites in some hillside pocket. A full-width road may use up all of the flat land, or the length of road may be such as to make the lots uneconomical to develop. If an isolated area such as this is thrown in with an adjoining lot fronting on the street, the developer loses one or more good building sites. More important, such "lost" sites constitute potential problems for the future. It is better to reach sites of this type with a carefully designed "panhandle" than lose them. When driveway easements used by two or three owners are necessary, they can be worked out by the developer, approved by the governing body, and made a recorded obligation on all future owners. If arrangements are thought out in advance, there need be no worry on the part of public officials that the easement may become a maintenance obligation.

Street right-of-way widths are also important. Buildable land is often limited. Thus no more land than necessary should be taken up with public streets. I have heard the argument that rights-of-way on hills should be wider, not narrower, than on the flat, so that city or county crews can have access to slopes when they erode. I believe this can be handled, when necessary, by maintenance easements. Utility districts do not need to own a strip of land through a block to be able to repair their sewers. A developer should not be required to give any more land to the municipality than the latter has real use for. It would seem better to have the subdivider's money go into useful improvements than have it go into unnecessary giveaways of land.

Street Standards

Studies of hillside development focus largely on the question of residential roads. This is natural, for little can be done to ease the problem of utilities. This leaves the street one of the few places where money can be saved. Also, as mentioned earlier, there is the very serious esthetic consideration in that wide roads and arbitrary limitations on grades and curves always result in great destruction of trees and natural features. In one subdivision on which I am working we found that, had the standard street section been used, the cross slope of 30% would have meant a "scar" some 87 feet wide, in which all trees and natural ground would be destroyed, and also that the banks on each side of the road would average 13 feet high. The quantity of earth to be moved, the immense destruction of beautiful oaks, and the difficult access to lots, caused one potential subdivider after another to pass up the land. Then, about the time one daring group got interested, I woke up to what I feel is a possible solution for hillside streets. That is—*all parking must be kept off the travelled roadway.* As long as one or both sides of a street serve as elongated parking-lots, the pavement cannot be materially narrowed. On-street parking is always dangerous, and narrow streets which allow only one moving lane (with passing possible only by weaving in and out between parked cars) can present problems in an emergency.

One thing I noticed when studying various hillside developments is that people do not park their cars on the street unless necessary. One Sunday afternoon in Berkeley I saw this illustrated most emphatically. A certain hillside street has a five-foot setback with parking on one side. At the time of my visit there was hardly a place to park in two blocks, although no parties or other special causes for congestion were evident. At right-angles to this street was another, along which the setback was between 20 and 25 feet. There were almost as many cars in sight along this street, but some 75% of them were parked in driveways, and only one car was parked in the street for every five or six homes. After noticing this, I found comparable conditions to be the normal pattern. On-street parking is no problem if there is room to park off the street. It does not require "No Parking" signs to get cars off the street—just space. Once parked cars are out of the way, great flexibility is possible in street design.

Off-Street Parking

One main source of off-street parking space is, of course, the surfaced or gravelled driveway to carport or garage. However, when a subdivision is being planned with narrow streets on which it is expected there will be no parking, it is not enough to hope that the home buyers will automatically provide for their parking needs. Where acreage lots occur, or where building sites are considerably above or below the road, owners tend to provide parking near the house, but this cannot be depended upon. In the case of smaller steep lots, there is a counter-tendency to build with minimum setbacks, often with less than a car length between the garage and the property line. Therefore, part of the initial planning of the subdivision should be an estimation of the overall parking requirements, and the deed restriction should call for a certain number of developed and surfaced on-lot parking spaces per building site. The actual number of spaces per lot will depend upon the development. Expensive estates, with two or three car families with a tendency toward entertainment, should have more parking area than a subdivision planned for middle-income residents.

Where hillside lots are a half acre or under, on-lot parking is seldom enough. Even in subdivisions of the largest lots, there should be occasional off-street parking spaces provided for the lost traveler, the car with a flat tire, etc.

Probably the simplest means of providing parking out of the traffic stream, yet on public property, is that used in the town of Hillsborough. There the streets are narrow, with concrete gutters on one or both sides. These gutters are so shaped that one can easily cross them with a car, either at right-angles or diagonally. Hillsborough residents have provided one or two parking bays per lot between the gutter and the property line. This system permits cars to get completely off the travelled way, freeing the street for traffic. In Hillsborough, the parking bays have been developed by the property owners, each one deciding the number needed and whether to pave or merely gravel the area behind the gutter. This may work satisfactorily in a slow-growing, stable community. However, I do not feel it is enough to rely on chance in the ordinary case where an open field becomes a neighborhood of a hundred homes in a year or two. The subdivider should provide parking bays outside the flowline of gutter, and these should be suitably surfaced at the time of street construction.

Obviously, this would not be much of a saving in a development of limited frontage lots, for the whole lot frontage would be taken up with driveway and parking bays. The only savings would be due to the fact that such bays might be more lightly surfaced than the travelled street. But, as the lot frontages increase, the advantage of this treatment over the standard street becomes more evident.

In the case of the small subdivision I mentioned earlier (which has 12% to 30% cross slopes and minimum lot frontages of 85 feet) a 20-foot paved street, bordered by concrete U-gutters is being provided. The U-shaped gutter has certain advantages over the conventional rolled or straight gutter. First is the ease of crossing, if the depth of waterway is kept within reason. Second is hydraulic capacity. Flow charts show that a U-gutter two feet wide by two inches deep will carry "on concrete" about four times as much water as a standard gutter. A U-gutter four feet wide by four inches deep will carry 15% more water, without overflowing onto the pavement, than an average street section flooded out to the crown. Keeping storm-water off the driving surface not only greatly improves traffic conditions during a rain, but also eliminates one serious cause of pavement wear. The U-gutter adds greater flexibility to design; widths can vary with expected flow and grade, provided there is enough difference in hydraulic requirements to justify the slight construction problem of using two or three gutter standards.

The major disadvantage of a U-gutter is that it provides no curb to prevent cars from inadvertently leaving the street, or from breaking loose when improperly parked. On grades above 5% or 6%, some form of vertical curb or bumper should be provided in parking bays. On the steepest streets, it might pay to park at 90° to the street. Obviously, if U-gutters and parking bays are used on a heavily travelled street with considerable foot traffic (especially school children), provision for a walk or improved footpath is necessary. In such cases, the walks should be placed outside the parking bays and kept as informal as possible to conform with this type of development. But generally the standards being discussed are for the quiet, residential street, where traffic and especially speed are discouraged by the narrow, winding roadway.

Example of a Good Solution

The hillside in our small subdivision is quite irregular topographically, and has many lovely oak trees. (See frontispiece) The two streets are definitely tertiary residential streets, with a collector-street bordering the development. Therefore, there is every reason to discourage any but local traffic from entering the subdivision. When we considered platting this land on the basis of conventional street standards, the heavy grading, destruction of trees and problems of lot access made the whole project impractical. Using a 20-foot street (plus gutters) permitted great flexibility. A narrow street could wind among the trees and avoid local steep spots, whereas a 35 or 40 foot pavement could only be "blasted through". The use of parking bays, instead of adding uniformly to the street width for parking, permitted the total graded surface "tight" spots to be narrowed to around 30 feet. Good trees could be left in place within 20 feet of the road centerline and, as mentioned, could be detoured around an especially fine oak. In breaks between trees, or where cross slopes ease, bays could be introduced on one or both sides of the street. Where cut or fill banks were steepest, diagonal entrance driveways made it possible to reach building sites. In extreme cases, lot corners could be nipped off to permit such a diagonal driveway to start opposite the adjoining lot. Of course, this is possible only when the building

site is 30 to 50 feet back from the street line.

A narrow pavement, clear of parked cars, will prove better for emergency vehicles and for normal traffic than any of the proposed hillside street standards permitting on-street parking. The side gutters act as a buffer between traffic and cars in parking bays, and simplify turning movements in and out of driveways.

Even the type of street improvement just suggested is too elaborate for certain areas. I have in mind one area on the Monterey Peninsula which is zoned for 5-acre building sites. Despite sweeping views, it is only partially developed, almost in the middle of the populated area. No one has been able to figure out how to develop it on the basis of current standards and make money on 5-acre lots. Yet there is a small but active demand for such homesites. Here is the kind of area where I believe a country road would be adequate. A 24-foot pavement with improved shoulders is currently allowable, but on a 50% side slope such a road requires a lot of earth moving. Where a road may sometime turn into a thoroughfare, adequate right-of-way and pavement is certainly in order. But this particular area—and there are many like it in mountainous terrain—has ridges and hilltops, where 5 or 10 five-acre building sites are necessary. Usually the roadway required for this type of development amounts to 200 or 300 feet per lot. Where the ultimate traffic movement is only a half dozen vehicles per hour, a single-lane road with frequent passing bays would make more sense than a minor highway.

Hypothetical Disadvantages

On of the standard arguments used by public officials who oppose any narrowing of streets is that someone may be holding a big party and that the guests' cars will be blocking the road just as a fire occurs beyond. On-lot parking, plus parking bays in front of the party-giver's home and his neighbors', will take care of several cars. Should parking requirements exceed these facilities, there will doubtless be a certain amount of on-street parking despite signs. The situation will then be a certain amount of on-street parking despite signs. The situation will then be about the same as for those hillside standards which count on only one moving lane between parked cars. It is always possible for traffic minded doubters to imagine great concentrations of parked cars which would make every solution impossible except a large parking lot for each house, on hillsides or anywhere else. Problems will develop under any set of conditions, and perhaps it is well to consider the fact that, if a **100%** solution of all hypothetical traffic, parking and pedestrian problems is required, the only perfect answer is to remove the hillside. Usually, however, to get the amenities of living among the trees on a large lot with views, people will put up with a slight amount of indirectness in getting to their homes or turning into their driveways. The families who want everything cut and dried will be looking for a home in a standard subdivision on flat land.

Costs

It has been claimed that the type of street development proposed in our subdivision will cost as much as standard subdivision improvements. Engineering design costs are sure to run more. At the moment I will not argue the dollars and cents cost per foot of street until we are further along with our subdivision. However, I do know that the narrower right-of-way which this street standard made possible saved the equivalent of one lot in this 33-lot subdivision. What is more, it saved land where it was needed, in the most buildable areas. The lower road banks simplified lot access where a standard street section would have required frontage roads and wider lots. Altogether, I believe we got at least five additional lots, plus the fact that the *preservation of trees has made each lot more valuable.* Total cost may be a bit higher, but I expect the final accounting will show a considerably lower cost per lot than if the area had been conventionally devoloped on a stereotyped plan.

Summary

Basically, I feel that hillside, large-lot and resort subdivisions cannot be controlled by hard and fast standards. Possibly no amount of study could set up hillside standards which would be uniformly applicable, though more extended consideration of the problems would help. A development of 10,000 sq. ft. lots in dense woods and with frequent, small cross-ravines, is a different problem from a subdivision of the same size lots, on the same gradient but on an open, uniform hillside. If the local market will bring $10,000 a lot, one can do a great deal more than where $3,000 to $4,000 is tops. Perhaps an answer is to establish certain standard requirements and then to permit deviations only in the case the subdivider presents a properly engineered plan with adequate substantiation for his requested variances from the normal.

Is it unreasonable to ask planning agencies to formulate new subdivision ordinances for hillsides and other special areas, rather than merely patch up the existing ordinances and label them "Hillside Subdivision Ordinance"? I think not.

In communities where these special types of development are important, I believe any study directed toward a new set of rules and regulations should start out by thinking about *fundamental* needs and protections for the lot owner and the public, and should demand no more than is basically required. It is easy to "goldplate" a hillside subdivision out of existence if "nice" ideas are confused with necessities. It is understandable why many public officials want a subdivision ordinance to be an all-inclusive check list so that they are not forced into commitments as to what constitutes adequate design for a given situation. It is much easier of course to check against an approved set of requirements than to "stick one's neck out". Having inflexible standards may be the only possible procedure in the case of mass-produced flat-land subdivisions. But in the difficult cases under discussion, standardization results in requirements that are more than the traffic will ordinarily bear and often with inferior results. In many instances a hillside subdivision which contains future maintenance problems for the street department can still be in the public interest if these problems are minor compared to the potential good to the whole community of the proposed development.

PLANITORIAL

(*Continued from Page 2*)

quences in community improvement, as the aims of the groups expand from counteraction to the centers to urban redevelopment on a broad social basis."

The study is published by the Institute of Research, Fairleigh Dickinson University, Rutherford, New Jersey, and is available from the University at three dollars a copy. We recommend it to those of our readers who have any interest in this field.

M.S.W.

In Print

Orders for publications reviewed are to be addressed to publisher in each case and not to URBAN LAND.

Great Cities of the World. Edited by William A. Robson. The Macmillan Co., 60 Fifth Ave., N.Y. 11, N.Y. 1957. 814 pp., photos, tables, maps. $11.00.

The editor has compiled an impressive group of articles on the government, politics and planning of twenty-four great metropolitan regions throughout the world. The first part of the book is devoted to a general discussion of the great city of today and its probable significant role in the future. The second part, composed of essays by authorities of the region, describes the political structure, municipal services and planning by the city. The student of government, the sociologist and the city planner will find this volume a valuable aid in research and reference.

How Much Industrial Zoning for Metropolitan Indianapolis? Metropolitan Planning Department of Marion County, Indiana. Prepared by Herbert D. Smith. September 1957.

This report should be of considerable interest to those concerned with the techniques of estimating future industrial land requirements for metropolitan areas, as it utilizes several projection methods to determine the proper amount of land which should be reserved for industry in Metropolitan Indianapolis.

The study is divided into two sections. Section I discusses and applies three methods of estimating the amount of land that will be *occupied* by industry at the target date. By use of the "industrial forecast method," based on replies of 294 manufacturing firms to the Metropolitan Planning Questionnaire, a study of post-war trends of new plant locations in the area and application of modern plant site requirements, it was estimated that an additional six square miles of land would be *occupied* by industry in Metropolitan Indianapolis by 1975. To check and substantiate the probable accuracy of this figure, the "employee density ratio" and the "total population ratio" methods were employed.

In Section II such factors as the need for accommodating non-manufacturing uses (such as bulk oil storage depots, junk yards, etc.) in industrial zones, the effect of insufficient industrially zoned land on property prices, and the impact of the new Interstate Highway program on future development are taken into account to determine the total amount of land which should be *zoned* for industry. Qualitative factors such as physical suitability of the land for industrial use were treated in previous reports of the Department and not included in this publication.

The conclusion of the study was that a total of fifteen square miles of land should be set aside for future industrial use in Metropolitan Indianapolis. This report recognizes the need for reserving ample space for future industrial use, and the criteria used to determine the amount of land which should be zoned for industry appear sound.

Builders' Homes for Better Living. A. Quincy Jones and Frederick E. Emmons. Reinhold Publishing Corporation, New York. 1957. 220 pp., photographs, sketches. $8.95.

Here is a fresh and interesting treatment on the subject of home building. It is not a technical book but rather a collection of basic ideas presented with the minimum of text fortified by photographs and clever sketches. The authors are architects with an understanding of some of the problems of the merchant builder. As such, their preoccupation is with the house although a brief chapter is devoted to the importance of community planning. The progressive builder will find the book a stimulating reference volume for ideas to promote both market appeal for his prospects and better satisfaction for his buyers.

Residential Finance, 1950. Richard U. Ratcliff, Daniel B. Rathbun, and Junia H. Honnold. John Wiley & Sons, Inc., 440 Fourth Ave., New York 16, N.Y. 1957. 180 pp., tables. $6.00.

The Committee on Census of Monographs, Social Science Council and the Bureau of Census sponsored this treatise on the 1950 Housing Census. The census data are used in discussing the position of participants in mortgage finance processes. The authors cover such subjects as: comparative lending practices, financial arrangements of borrowers, junior mortgages, financing of rental housing, and the impact of government mortgage guarantees. Also included are statistics and a summary analysis on mortgage indebtedness, terms and types of holders.

This study interprets census data and should be useful to those with an interest in residential construction and investment, as well as to practitioners in the mortgage lending field.

The Central Business District in Transition. Shirley F. Weiss. Box 1368, Chapel Hill, North Carolina. 1957. 44 pp., tables. $2.00.

This is a comparison study of the existing methods of analyzing central business districts. The author points up many areas of inadequate research and offers suggested improvements.

The report includes discussion of retail sales attraction, land values, population, purchasing power, business establishments and employment.

The primary purpose of the study is to show cities how to make a reasonable prediction of the future potential of their central business districts.

Your Community Can Benefit From the Tourist Business. Office of Area Development, U. S. Dept. of Commerce, Washington, D. C. 1957. 22 pp. 15¢

This booklet explains how communities can receive additional revenue from existing but undeveloped tourist attractions. It contains a good discussion of the tourist industry potential plus information on what other communities are doing to promote their area.

ULI MEMBERSHIP

Membership is open to any individual, company, organization or public agency. ULI's objectives are to promote sound city growth, conservation of present commercial, industrial and residential areas, and the reconstruction of blighted areas.

Services and publications of the Institute are available as follows: $10 per year subscription for students and libraries; $25 membership for corporations, associations, public agencies, and their representatives; $100 Sustaining membership including affiliation with Community Builders' or Industrial Council.